cigre
For power system expertise

Service isolation and differentiation in a multiservice MPLS-TP packet-switched network.

SC D2 – PS3 – Question 3.6

At the remote site level, for example at the substations, where multiple services exist, discuss the techniques used to segment, isolate and apply service differentiation in a multi-service packet-switched network. A challenging example is the case of protection relays – discuss the approaches that can be used in designing a packet-switched network to securely segregate the two services (SCADA and relay management), both of which are applicable to protection relays – you may choose to submit your contribution to include this challenging example, or you may choose to contribute other example cases if desired.
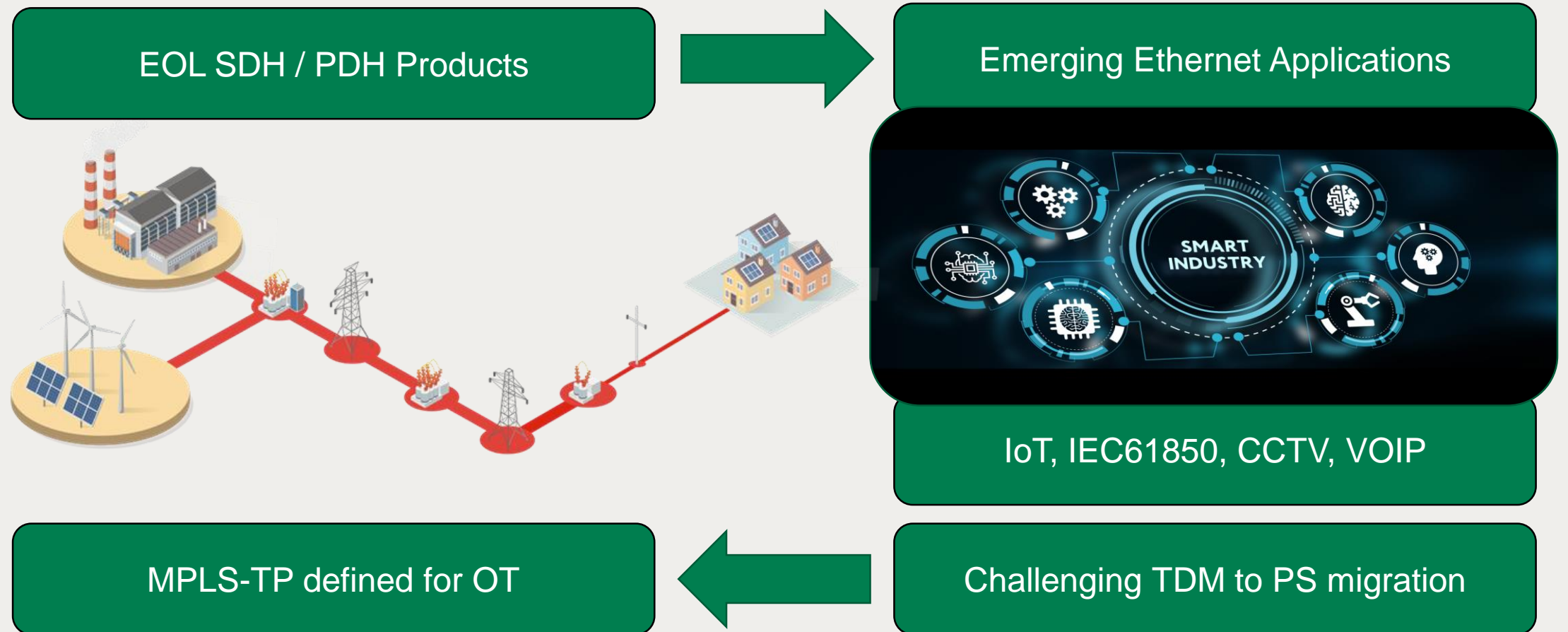
BELDEN

Davy Haegdorens - JAPAN

OTN Systems

Multiservice Utilities Network

EOL SDH / PDH Products

Emerging Ethernet Applications

IoT, IEC61850, CCTV, VOIP

MPLS-TP defined for OT

Challenging TDM to PS migration

MPLS-TP Service Segregation and Differentiation

Application

Application

MPLS-TP LSP (Static)

Pseudo Wire Emulation Edge-To-Edge (PWE3)

Client Signal

Differential Protection		MPLS-TP LSP	Prio 5		Differential Protection
SCADA			Prio 4		SCADA
voice			Prio 3		voice
CCTV			Prio 2		CCTV
LAN		PWE3	Prio 1		LAN

3
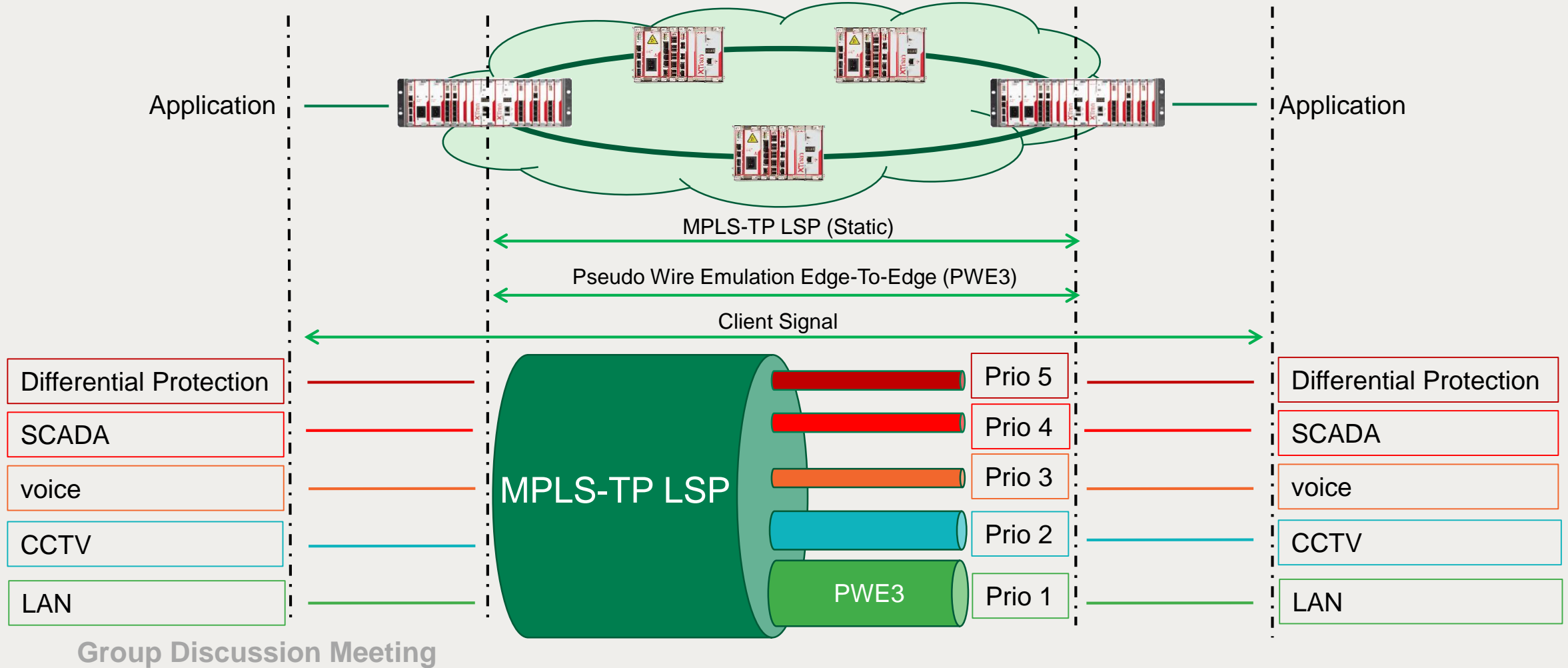
CONCLUSION

- MPLS-TP = secure isolated service transport.

  - Service segregation via LSP and PWE3

  - Service differentiation with a 100% QoS

  - Guaranteed constant delay